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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------|-------------|----------------------|---------------------|------------------|
| 10/821,954 | 04/12/2004 | Evelyn Boettcher | 082134-0308872 | 2383 |
| 909 | 7590 | 11/15/2004 | EXAMINER | |
| PILLSBURY WINTHROP, LLP | | | CALEY, MICHAEL H | |
| P.O. BOX 10500 | | | ART UNIT | |
| MCLEAN, VA 22102 | | | PAPER NUMBER | |
| | | | 2871 | |

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/821,954

Applicant(s)

BOETTCHER ET AL.

Examiner

Michael H. Caley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) 19-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-17, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04122004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 19-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 10/12/04.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13-17, 22, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Hay et al. (U.S. Patent No. 6,278,811 “Hay”).

Regarding claim 13, Hay discloses a method of filtering an optical signal, comprising:

coupling an optical signal into an optical fiber (Column 4 lines 49-54);

receiving a filtered optical signal out of the optical fiber (Column 4 lines 49-52);

and

varying a load applied to a compliant support block (Column 4 line 55 – Column 5 line 13) having at least a portion of the optical fiber embedded therein (Column 5 lines 28-35),

wherein the portion of the optical fiber embedded in the compliant support block has a periodic variation in refractive index along at least a portion thereof to form a fiber Bragg grating in the optical fiber (Column 4 lines 15-34).

Regarding claim 14, Hay discloses varying the load applied to the compliant support block as changing a transmission characteristic of the fiber Bragg grating (abstract).

Regarding claim 15, Hay discloses the compliant support block as having a substantially cylindrical shape (Column 4 lines 62-63; Figure 1).

Regarding claim 16, Hay discloses the filtered optical signal as reflected from the fiber Bragg grating (Figure 1 element 6).

Regarding claim 17, Hay discloses the filtered optical signal as transmitted through the fiber Bragg grating (Figure 1 element 8).

Regarding claim 22, Hay discloses the optical signal as coupled into the optical fiber as a wavelength division multiplexed optical signal having a plurality of signal channels (Column 10 lines 21-30).

Regarding claim 23, Hay discloses the filtered optical signal as a single channel selected from the plurality of signal channels (Column 10 lines 28-30).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 14, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelberth (U.S. Patent No. 5,991,483).

Regarding claim 13, Engelberth discloses an optical fiber grating package comprising:

an optical fiber (Figure 2 element 32); and

a method comprising:

varying a load applied to a compliant support block (Figure 2 element 33; Column 3 lines 26-30, 33-38) having at least a portion of the optical fiber embedded therein,

wherein the portion of the optical fiber embedded in the compliant support block has a periodic variation in refractive index along at least a portion thereof to form a fiber Bragg grating in the optical fiber (Figure 2; Column 4 lines 36-44).

Engelberth fails to disclose the method steps of coupling an optical signal into the optical fiber and receiving the filtered optical signal out of the optical fiber in a method of filtering an optical signal. Engelberth, however, teaches various filtering uses of the optical fiber grating package, such as for adding and subtracting channels in a wavelength division multiplexing

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device (Column 1 lines 42-48), which inherently include the method steps of coupling an optical signal into an optical fiber and receiving a filtered optical signal out of the optical fiber.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the optical fiber grating package device in the proposed filtering method steps. Engelberth teaches various filtering methods using the disclosed fiber grating package which include the steps of coupling a signal to an optical fiber and receiving the signal from an optical fiber. One would have been motivated to use the tunable grating disclosed by Engelberth in such a method to benefit from a finely tunable active strain adjustment device (Column 2 lines 31-45).

Regarding claim 14, Engelberth discloses varying the load applied to the compliant support block as changing a transmission characteristic of the fiber Bragg grating.

Regarding claim 22, Engelberth discloses the optical signal coupled into the optical fiber as a wavelength division multiplexed optical signal having a plurality of signal channels (Column 4 lines 60-63).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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U.S. Patent No. 6,240,220 to Pan et al. as an alternative optical filter having an optical fiber Bragg grating in a compliant support block to which a varying load is applied (Column 4 lines 49-56, Column 5 lines 40-44).

U.S. Patent No. 5,694,501 to Alavie et al. as an alternative optical filter having an optical fiber Bragg grating in a compliant support block to which a varying load is applied (Figure 5A).

U.S. Patent No. 5,953,141 to Liu et al. as an example of an alternative wavelength division multiplexing system utilizing tunable fiber Bragg gratings to produce both reflected and transmitted filtered signals in an optical routing network.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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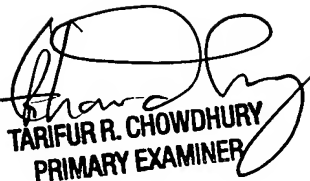
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Michael H. Caley

October 21, 2004

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TARIFUR R. CHOWDHURY
PRIMARY EXAMINER